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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/533,397  | 04/26/2005  | Eiji Oki             | 5259-052/NP         | 1591             |
| 27572 7590 06/07/2010<br>HARNESS, DICKEY & PIERCE, P.L.C.<br>P.O. BOX 828<br>BLOOMFIELD HILLS, MI 48303 |             |                      |                     |                  |
| EXAMINER  |             |                      |                     |                  |
| PHAM, TITO Q  |             |                      |                     |                  |
| ART UNIT  |             | PAPER NUMBER         |                     |                  |
| 2466  |             |                      |                     |                  |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/533,397

**Applicant(s)**

OKI ET AL.

**Examiner**

TITO PHAM

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**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 February 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 3-22 and 24-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-19, 24, and 26-41 is/are allowed.
- 6) ☒ Claim(s) 1, 3, 20-22, 25, 42 and 43 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

1. This communication is in response to amendment filed on February 8, 2010. Claims 1, 3-22, and 24-43 are pending.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3, 20-22, 25, 42, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oki et al. (US Pub. No. 2003/0161633) in view of Imajuku et al. (US Pub. No. 2003/0147645) in view of Liu (XP-001174200).

Regarding **claims 1 and 22**, Oki discloses a method and a GPLS+IP/MPLS node (figure 22 node 3C) which is used in a network in which a GMPLS (Generalized Multi Protocol Label Switching) network (figure 22 optical network 8C) and an IP (Internet Protocol) network (figure 23 network 7C) are mixed, the GMPLS network comprising a node (figure 22 node 3C) having a GMPLS function (LSC function), the IP network comprising an IP/MPLS (Internet Protocol/Multi Protocol Label Switching) node (figure 22 node 2C), and which constitutes the GMPLS network (figure 22 network 8C), and which processes a

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GMPLS protocol (optical LS) and an IP/MPLS protocol (PSC), the GMPLS+IP/MPLS node comprising:

a device (figure 22 element 3C and figure 23 element 30C) which establishes a GMPLS label path of a packet layer (paragraph 296) with another GMPLS+IP/MPLS node in the GMPLS network (paragraphs 58 and 59); and

a device (figure 22 element 1C-3) which tunnel transfers (see figure 22; packet is tunneled though optical path) a packet transferred from the IP/MPLS node (figure 22 node 2C) with the other GMPLS+IP/MPLS node (figure 22 node 3C) through the GMPLS label path.

a device which advertises link state information of the GMPLS label path of the packet layer to the IP/MPLS node in the same form as that of a link between IP/MPLS nodes by a router LSA so that the IP/MPLS node treats the GMPLS label path (Label Switching Advertisement) (figure 23 routing processing function 20C, link state database 22C in view of "to other nodes (advertisement information) on the bottom right of the figure; paragraphs 403 and 404; flooding section 21C is a function section which communicates to the adjacent nodes its link state information database; flooding section 21C is considered a router LSA as it performs the function of advertising to the adjacent nodes (packet switch/IP node and optical switch/GMPLS node) its link state information).

Oki does not teach each packet switch/router and optical node has a separate link state database. However, in the same field of endeavor, Imajuku discloses a router with PSC and an optical node with LSC; each has a separate

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link state database. These databases are updated upon a link advertisement (paragraphs 258 and 259). Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention to implement in Oki a separate link state database for each router/optical node. The motivation is to have a decentralized control of a node.

Oki does not teach the GMPLS+IP/MPLS node includes PSC (packet switching capable) and LSC (lambda switch capable), the IP/MPLS nodes does not match with the GMPLS protocol, and the IP/MPLS treats the GMPLS label path as a normal link between the IP/MPLS nodes. However, in the same field of endeavor, Liu discloses a GMPLS network connects to a client router (page 227 figures 2 and 3) wherein the client router does not match with the GMPLS protocol (layer 3 router vs. optical node) and the optical (GMPLS) node includes PSC and LSC (page 220: GMPLS includes PSC and LSC; figures 2 and 3: optical tunneling of label switch path (LSP)). In figure 3 and page 227, network setup of Liu is similar to Oki's figure 22 where routers can communicate with each other via optical nodes. Liu's page 227 cites "a client can send and LSP setup request along with destination client address and required LSP parameters such as bandwidth, the desire protection and diversity, etc. to one of connected network node. The network node computes the LSP according to network routing information, the requested LSP parameters and traffic engineering requirement and establishes the LSP in the network." Further down, page 227 also discloses a prototype network of GMPLS nodes (optical node) and client nodes (router). Page 227 cites "in the prototype network, the links with the same end nodes and

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characteristics are grouped into a TE link bundle which allow summarization and reduction of information distributed by OSPF-TE. RSVP-TE with GMPLS extensions is used as the signaling protocol in the core network and the OIF UNI 1.0 is used to invoke the network services by the client nodes." Since client is allowed to send LSP setup request to another client on the other side of the GMPLS network, the client node must have the link advertising information from the GMPLS and treats it as a normal link in order to send out the LSP. Thus it would be obvious to apply Liu's client router to Oki's router and Liu's optical node to Oki's optical node. Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention to implement in Oki teach the GMPLS+IP/MPLS node includes PSC (packet switching capable) and LSC (lambda switch capable), the IP/MPLS nodes does not match with the GMPLS protocol, and the IP/MPLS treats the GMPLS label path as a normal link between the IP/MPLS nodes. The motivation is to allow LSP tunneling between client routers through GMPLS/optical network (figures 2 and 3).

Regarding **claims 3 and 25**, all limitations in claims 2 and 22 are disclosed above. Oki further teaches a device (figure 23 element 22C) which holds the link state information having the GMPLS label path of the packet layer advertised as the link; and a device (figure 23 element 23C) which holds link state information inside of the GMPLS network.

Regarding **claim 20**, Oki discloses an IP/MPLS node (figure 22 node 2C) which is used in a network in which a GMPLS network (figure 22 network 8C) and an IP network (network 7C) are mixed, the GMPLS network comprising a node (node 3C) having a GMPLS function, the IP network comprising an IP/MPLS node, and which is connected to the GMPLS network, and a GMPLS+IP/MPLS node which constitutes the GMPLS network and which is capable of processing a GMPLS protocol and an IP/MPLS protocol establishes a GMPLS label path of a packet layer with another GMPLS+IP/MPLS nodes in the GMPLS network (see figure 22),

the IP/MPLS node comprising a device (figure 23 element 22C or 23C) which holds link state information (link state database) having a GMPLS label path of the packet layer advertised in the same form as that of a link between IP/MPLS nodes by a router LSA as a normal link in the IP/MPLS node (paragraphs 403 and 404; flooding section 21C is a function section which communicates to the adjacent nodes its link state information database).

Oki does not teach each packet switch/router and optical node has a separate link state database. However, in the same field of endeavor, Imajuku discloses a router with PSC and an optical node with LSC; each has a separate link state database. These databases are updated upon a link advertisement (paragraphs 258 and 259). Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention to implement in Oki a separate

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link state database for each router/optical node. The motivation is to have a decentralized control of a node.

Oki does not teach the GMPLS+IP/MPLS node includes PSC (packet switching capable) and LSC (lambda switch capable), the IP/MPLS nodes does not match with the GMPLS protocol, and the IP/MPLS treats the GMPLS label path as a normal link between the IP/MPLS nodes. However, in the same field of endeavor, Liu discloses a GMPLS network connects to a client router (page 227 figures 2 and 3) wherein the client router does not match with the GMPLS protocol (layer 3 router vs. optical node) and the optical (GMPLS) node includes PSC and LSC (page 220: GMPLS includes PSC and LSC). In figure 3 and page 227, network setup of Liu is similar to Oki's figure 22 where routers can communicate with each other via optical nodes. Liu's page 227 cites "a client can send an LSP setup request along with destination client address and required LSP parameters such as bandwidth, the desired protection and diversity, etc. to one of connected network node. The network node computes the LSP according to network routing information, the requested LSP parameters and traffic engineering requirement and establishes the LSP in the network." Further down, page 227 also discloses a prototype network of GMPLS nodes (optical node) and client nodes (router). Page 227 cites "in the prototype network, the links with the same end nodes and characteristics are grouped into a TE link bundle which allows summarization and reduction of information distributed by OSPF-TE. RSVP-TE with GMPLS extensions is used as the signaling protocol in the core network and the OIF UNI 1.0 is used to invoke the network services by the client



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nodes." Since client is allowed to send LSP setup request to another client on the other side of the GMPLS network, the client node must have the link advertising information from the GMPLS and treats it as a normal link in order to send out the LSP. Thus it would be obvious to apply Liu's client router to Oki's router and Liu's optical node to Oki's optical node. Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention to implement in Oki teach the GMPLS+IP/MPLS node includes PSC (packet switching capable) and LSC (lambda switch capable), the IP/MPLS nodes does not match with the GMPLS protocol, and the IP/MPLS treats the GMPLS label path as a normal link between the IP/MPLS nodes. The motivation is to allow LSP tunneling between client routers through GMPLS/optical network (figures 2 and 3).

Regarding **claim 21**, all limitations in claim 1 are disclosed above. Oki further teaches an IP/MPLS node (figure 22 node 2C) which is connected to the GMPLS network, and which is provided with a device (figure 23 element 23C) which holds link state information having a GMPLS label path of the packet layer advertised as a link.

Regarding **claim 42**, all limitations in claim 22 are disclosed above. Oki further teaches IP/MPLS node holds link state information having the GMPLS label path of the packet layer advertised as a link (figure 23 element 22C).

Regarding **claim 43**, all limitations in claim 22 are disclosed above. Oki further teaches providing an IP/MPLS node (figure 22 node 2C) which transfers a

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packet. The rest of the limitations are similar/repeated of parent claim 22. Thus the same analysis of claim 22 is applied.

***Allowable Subject Matter***

4. Claims 4-19, 24, and 26-41 are allowed.

***Response to Arguments***

5. Applicant's arguments with respect to claims 1, 3, 20-22, 25, 42, and 43 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will

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the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TITO PHAM whose telephone number is (571) 272-4122. The examiner can normally be reached on Monday-Friday 8AM-5PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Ryman can be reached on 571-272-3152. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TP

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/Daniel J. Ryman/

Supervisory Patent Examiner, Art Unit 2466